

HISTORY OF MEDICINE

Outbreak of trichinosis (trichiniasis)—contracted in London in 1879

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The Committee Minutes of the Seamen's Hospital Society (SHS) dated 10 October 1879 recorded¹: "The Secretary having reported the admission [to the Dreadnought Hospital, Greenwich] of 10 boys from the Training Ship Cornwall Ordered! that a sub committee be appointed consisting of Messrs Joseph Moore (Chairman[]), T R Edridge [and] Captain Budd to confer with the Committee of the Training Ships on the Thames with the view to making permanent provision for the isolation and treatment of sick boys on board such vessels . . ." A total of 14 boys had in fact been admitted to the Dreadnought Hospital: 10 on 1 October, and four on 6 October.

These and subsequent cases (43 in all, which occurred between 23 September and 23 October 1879, on the reformatory school-ship lying off Purfleet [fig 1], several miles downstream from Greenwich) were first considered (like those in a previous outbreak in October 1875) by Harry Leach (1836–79)—one of the visiting physicians to the SHS—to be caused by *enteric fever* which originated from the "fouling of the water-supply with excremental matter from a patient sick of the malady".² It became widely felt that the "outflows of the metropolitan sewage . . . at Crossness and Barking" were responsible for this entity.² However, doubts about this diagnosis soon arose and "the Committee of the ship [applied] to the Home Secretary for additional skilled assistance [to investigate] the outbreak".³ One of the medical inspectors employed by the Local Government Board—W H Power FRS (1842–1916)—was directed to visit the ship.^{3,4} He was immediately suspicious that the disease was not enteric fever, but trichinosis (trichiniasis),⁵ and an "application was made to the Home Secretary for permission to exhume [after burial two months earlier] the body of the only youth who had died [on the 18th day of his illness] of the malady".^{2,4} Powers' suspicion was confirmed at postmortem, and ingestion of "certain American pork" was incriminated aetiologically. The *Lancet* considered that "the people in this country have hitherto had a remarkable immunity [to the acute form of trichinosis]—an immunity which, it is to be feared, since the large and increasing importation of foreign pork, is becoming a thing of the past".³

The *British Medical Journal's* correspondent recorded: "the only previous [recognised] outbreak of trichinosis [in England had occurred] at Workington, Cumberland, in April 1871⁴ [and was] caused by eating the flesh of a home-fed pig". This information was corroborated by



Figure 1 The "Cornwall" reformatory school-ship lying off Purfleet; she had originally (in 1815) been named the "Wellesley" but was renamed in 1868 when her role had been changed (Navy & Army Illustrated 1902; 9 August: 522) The ship was subsequently sunk by enemy action on 24 September 1940.

Cobbold (see below) in a letter to that journal.⁶ An anonymous writer (who emphasised the potential seriousness of the infection)⁴ proceeded to recommend adequate cooking of all pork—whether "trichinised" or not; outbreaks of trichinosis on the European continent were due, he considered to the flesh being inadequately cooked, "an unpleasant habit [which was] common in many parts of Germany of eating pork, particularly in the form of sausages, more than half raw".⁴ "Uncooked pork or ham [he wrote] is excessively dangerous, and should never be eaten by any person who respects his health or his life . . .".⁴

The matter was deemed to be of such importance that it was raised in the House of Lords (by Lord Thurlow [1838–1916]) on 19 February and 23 March 1880.^{7–9} After a brief delay, the Power report (the author was ably assisted by Mr Mortimer de Brent) was published^{2,10}; the thoroughness of the investigation, which demonstrated beyond doubt that the outbreak was caused by "salt [trichinised] pork" was praised by anonymous writers in both the *Lancet* and *British Medical Journal*. A careful histological examination of the exhumed body (by Dr Robert Cory^{2,10}) had disclosed "trichinae . . . largely in the muscles, particularly in the diaphragm, some fully grown and one wandering and living, others in different stages of less development, and considerable numbers of brood trichinae . . . beneath the under-surface of the mucous membrane of the intestine".² The boys' food had apparently been prepared (in bulk) differently from that of the officers on board the *Cornwall* "who escaped illness"; the suspect

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Submitted 9 July 1999
Accepted 13 January 2000

meat was “American pork” . . . obtained from a firm in Bristol [consisting] solely of “belly-pieces”, and therefore of parts of many pigs, and of those parts most likely to be infested with trichinae”. How many of the cases formerly diagnosed as “enteric fever” had in fact been caused by trichinosis, these writers asked!

Historical aspects of trichinosis

Larvae of *Trichinella spiralis* had first been identified in *Homo sapiens* in a patient under the care of Dr George Leith Roupell FRS (1797–1854)¹¹ at St Bartholomew’s Hospital, London in 1834.^{5 12} The 21 year old James Paget FRS (1814–99), then a first year medical student, witnessed this autopsy, and it was probably he who first noted and recorded the “whitish specks . . . scattered throughout the muscles” of this middle-aged Italian man.¹² However, Paget’s discovery was publicised (and a definitive report subsequently written) by Richard Owen FRS (1804–92); he is now widely regarded, almost certainly erroneously, as the discoverer of the larval form of *T spiralis*.

Priority in the discovery of *T spiralis* infection subsequently became the subject of a heated correspondence both in the leading medical journals and also *The Times*. Reports in 1866 concentrated initially on cases of the infection in Germany,^{13–22} although a Guy’s Hospital case (in 1828) was brought to the fore; Cobbold (see below) referred his readers to the works of Virchow, Leuckart, and Pagenstecher for accurate descriptions of this parasitosis,¹⁵ but this correspondence concluded that Paget should be given the credit for the discovery.²² Further reference to the controversy occurred in 1882 (that is, soon after the *Dreadnought* outbreak had been reported).^{23–26} Claims by Owen that he should be given credit for the initial discovery^{23 25} were vehemently dismissed by Cobbold.^{24 26} The discovery had in fact been recorded by Paget at the Abernethian Society on 6 February 1835¹²; Owen’s paper, which was read at the Zoological Society, followed 18 days later. That is where the matter rests!

Subsequent views on the SHS outbreak

Curiously, Thomas Spencer Cobbold FRS (1828–86) (see above) (unquestionably the most distinguished helminthologist in England at that time) expressed doubt about the diagnosis of the *Cornwall* cases²⁷; he concluded that the disease was *not* caused by *T spiralis* but by an “unknown form of nematode parasite”, and that “we ought rather to look to an indifferent water supply than to diseased meat as the primary source of the outbreak”. Not too surprisingly, an anonymous correspondent in the *Lancet* was somewhat critical of Cobbold’s opinion²⁸; however, his conclusions were upheld by W L Dickinson (who had apparently

detected the first (recognised) outbreak of trichinosis in Britain—at Workington [see above]).^{6 29} The reason(s) for Cobbold’s scepticism remains unresolved, and the bulk of evidence supports trichinosis (trichiniasis) as the cause of this outbreak.

Details of this unfortunate outbreak were succinctly summarised in the General Report of admissions to SHS establishments published in 1880³⁰; trichinosis, it recorded, “has frequently been observed on the Continent, particularly in Germany and in the Netherlands, but very rarely in this country [England]”. That fortunate situation (for Britain) still pertains today! In many respects this outbreak of 1879 possesses parallels *in reverse*, to the 1999 reluctance of European mainland countries to accept British beef—which they maintained could be harbouring the causative agent of bovine spongiform encephalopathy (BSE).³¹

- 1 Minutes of the Seamen’s Hospital Society 10 (28 July 1876–22 June 1883): 209–10.
- 2 Anonymous. Trichinosis v enteric fever. *Lancet* 1880;i:574–5.
- 3 Anonymous. Trichinosis on board the school-ship “Cornwall” in the Thames. *Lancet* 1880;i:66.
- 4 Anonymous. Trichinosis in the school-ship “Cornwall”. *BMJ* 1880;i:101–2.
- 5 Gould SE. *Trichinosis*. Springfield, Illinois: CC Thomas, 1945: 356.
- 6 Cobbold TS. Outbreak of trichiniasis in Cumberland. *BMJ* 1871;i:435.
- 7 Anonymous. Medico-parliamentary. House of Lords, Thursday, February 19th. Trichinosis. *BMJ* 1880;i:348.
- 8 Anonymous. Trichinosis. *Lancet* 1880;i:376–7.
- 9 Anonymous. Medico-parliamentary. House of Lords, Tuesday March 23rd. Trichinosis on board the Cornwall training-ship. *BMJ* 1880;i:497.
- 10 Anonymous. Trichinosis on board the *Cornwall*. *BMJ* 1880;i:523–5.
- 11 Cook GC. George Leith Roupell FRS (1797–1854): significant contributions to the early nineteenth-century understanding of cholera and typhus. *J Med Biog* 2000;8:1–7.
- 12 Grove DI. *Trichinella spiralis* and trichinosis. *A history of human helminthology*. London: CAB International, 1990: 571–95.
- 13 Anonymous. The last new disease. *The Times*, London 1866; 10 January: 6.
- 14 Anonymous. The new disease. *The Times*, London 1866; 2 February: 6.
- 15 Cobbold TS. The new disease. *The Times*, London 1866; 3 February: 10.
- 16 [Wilks S]. The new disease. *The Times*, London 1866; 8 February: 7.
- 17 Cobbold TS. The new disease. *The Times*, London 1866; 10 February: 10.
- 18 [Wilks S]. *The Times*, London 1866; 14 February: 5.
- 19 Cobbold TS. On the discovery of trichina. *Lancet* 1866;i: 224–5.
- 20 Paget J. On the discovery of trichina. *Lancet* 1866;i:269.
- 21 Wilks S. On the discovery of trichina. *Lancet* 1866;i:269–70.
- 22 Cobbold TS. On the discovery of trichina. *Lancet* 1866;i: 291.
- 23 Owen R. The discovery of trichina spiralis. *Lancet* 1882;ii:869.
- 24 Cobbold TS. “The discovery of trichina spiralis.” *Lancet* 1882;ii:911.
- 25 Owen R. “The discovery of trichina spiralis.” *Lancet* 1882;ii:989.
- 26 Cobbold TS. “The discovery of trichina spiralis.” *Lancet* 1882;ii:1056.
- 27 Cobbold TS. Trichinosis. *The Times*, London 1880; 3 May: 12.
- 28 Anonymous. Trichinosis and trichinosis. *Lancet* 1880;i:733.
- 29 Dickinson WL. Trichinosis. *BMJ* 1880;i:832.
- 30 Smith WJ. *A general report of the cases under treatment at the Seamen’s Hospital, Greenwich, together with an analysis of the medical and surgical cases*. Greenwich: Seamen’s Hospital Society, 1880: 5–7.
- 31 Anonymous. Comme a la guerre: Blair’s Francophilia has led him into a trap. *The Times*, London 1999; 10 December: 27.